

IP Grade

Waterproof and dustproof standards for electrical machinery is specified in the IP grade of IEC(International Electrotechnical Commission) and JIS(Japanese Industrial Standard).The first digit of two digit numbers means "dustproof rating" and the second digit is "waterproof rating".

In the code IP45, for example, IP identifies this standard, the "4" describes the level of protection from solid objects,and the "5" describes the level of protection from liquids.

When indicating a waterproof rating only for IP standard, it is denoted by 「IPX5」.

IP (Ingress Protection) codes

IP

IP code chart

First characteristic numeral (Penetration of solids)		Second characteristic numeral (Waterproofing)	
number	Degree of protection against proximity and ingress of foreign solid objects from external products.	number	Degree of protection against penetration of water with harmful effects from external products.
0	Not protected	0	Not protected
1	Protected against solid foreign objects of 50mm diameter and greater.Protected against access to hazardous parts with the back of hand.	1	Protected against vertically falling water drops.
2	Protected against solid foreign objects of 12.5mm diameter and greater.Protected against access to hazardous parts with a finger.	2	Water sprayed at an angle up to 60°degrees on either side of the vertical shall have no harmful effects.
3	Protected against solid foreign objects of 2.5mm diameter and greater.Protected against access to hazardous parts with a tool.	3	Water splashed against the enclosure from any direction shall have no harmful effects.
4	Protected against solid foreign objects of 1.0mm diameter and greater.Protected against access to hazardous parts with a wire.	4	Water projected in jets against the enclosure from any direction shall have no harmful effects.
5	Ingress of dust(75 μ m diameter) is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation of the apparatus or to impair safety.	5	Water projected in powerful jets against the enclosure from any direction shall have no harmful effects.
6	No ingress of dust (75 μ m diameter)	6	Water projected in jets against the enclosure from any direction shall have no harmful effects.
		7	Protected against the effects of temporary immersion in water.Products intended for use in water.
		8	Protected against the effects of continuous immersion in water.Products intended for use in more severe conditions than number 7.

Verificaion(waterproofing test in no load of stopper plate) of waterproof specifications for all Hoshimoto handles,please contact us.

IP standard is the confirmation of waterproof performance in the laboratory test, please check our test under actual equipment and condition.